SEQUENCE LISTING

<110> Seiki Motoharu

<120> DNA CODING FOR NOVEL POLIPEPTIDE

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<140> 09/806,232
<141> 2001-03-28

<150> PCT/JP99/05349
<151> 1999-09-29

<150> JP10-276258
<151> 1998-09-29

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<170> PatentIn Ver. 2.0

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Ala Ala His Gly Gly Cys Ala Ala Pro Ala Pro Arg Ala Glu Asp Leu
            35                  40                  45

Ser Leu Gly Val Glu Trp Leu Ser Arg Phe Gly Tyr Leu Pro Pro Ala
        50                  55                  60

Asp Pro Ala Ser Gly Gln Leu Gln Thr Gln Glu Glu Leu Ser Lys Ala
65                  70                  75                  80

Ile Thr Ala Met Gln Gln Phe Gly Gly Leu Glu Thr Thr Gly Ile Leu
                85                  90                  95

Asp Glu Ala Thr Leu Ala Leu Met Lys Thr Pro Arg Cys Ser Leu Pro
                100                 105                 110

Asp Leu Pro Pro Gly Ala Gln Ser Arg Arg Lys Arg Gln Thr Pro Pro
            115                 120                 125

Pro Thr Lys Trp Ser Lys Arg Asn Leu Ser Trp Arg Val Arg Thr Phe
    130                 135                 140

Pro Arg Asp Ser Pro Leu Gly Arg Asp Thr Val Arg Ala Leu Met Tyr
145                 150                 155                 160

Tyr Ala Leu Lys Val Trp Ser Asp Ile Thr Pro Leu Asn Phe His Glu
                165                 170                 175

Val Ala Gly Asn Ala Ala Asp Ile Gln Ile Asp Phe Ser Lys Ala Asp
```

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His Asn Asp Gly Tyr Pro Phe Asp Gly Pro Gly Gly Thr Val Ala His
        195                 200                 205

Ala Phe Phe Pro Gly Asp His His Thr Ala Gly Asp Thr His Phe Asp
    210                 215                 220

Asp Asp Glu Pro Trp Thr Phe Arg Ser Ser Asp Ala His Gly Met Asp
225                 230                 235                 240

Leu Phe Ala Val Ala Val His Glu Phe Gly His Ala Ile Gly Leu Ser
                245                 250                 255

His Val Ala Ala Pro Ser Ser Ile Met Gln Pro Tyr Tyr Gln Gly Pro
            260                 265                 270

Val Gly Asp Pro Val Arg Tyr Gly Leu Pro Tyr Glu Asp Arg Val Arg
        275                 280                 285

Val Trp Gln Leu Tyr Gly Val Arg Glu Ser Val Ser Pro Thr Ala Gln
    290                 295                 300

Leu Asp Thr Pro Glu Pro Glu Glu Pro Pro Leu Leu Pro Glu Pro Pro
305                 310                 315                 320

Asn Asn Arg Ser Ser Thr Pro Pro Gln Lys Asp Val Pro His Arg Cys
                325                 330                 335

Thr Ala His Phe Asp Ala Val Ala Gln Ile Arg Gly Glu Ala Phe Phe
                340                 345                 350

Phe Lys Gly Lys Tyr Phe Trp Arg Leu Thr Arg Asp Arg His Leu Val
        355                 360                 365

Ser Leu Gln Pro Ala Gln Met His Arg Phe Trp Arg Gly Leu Pro Leu
    370                 375                 380

His Leu Asp Ser Val Asp Ala Val Tyr Glu Arg Thr Ser Asp His Lys
385                 390                 395                 400

Ile Val Phe Phe Lys Gly Asp Arg Tyr Trp Val Phe Lys Asp Asn Asn
                405                 410                 415

Val Glu Glu Gly Tyr Pro Arg Pro Val Ser Asp Phe Ser Leu Pro Pro
            420                 425                 430

Gly Gly Ile Asp Ala Val Phe Ser Trp Ala His Asn Asp Arg Thr Tyr
        435                 440                 445

Phe Phe Lys Asp Gln Leu Tyr Trp Arg Tyr Asp Asp His Thr Arg Arg
    450                 455                 460

Met Asp Pro Gly Tyr Pro Ala Gln Gly Pro Leu Trp Arg Gly Val Pro
465                 470                 475                 480

Ser Met Leu Asp Asp Ala Met Arg Trp Ser Asp Gly Ala Ser Tyr Phe
                485                 490                 495

Phe Arg Gly Gln Glu Tyr Trp Lys Val Leu Asp Gly Glu Leu Glu Ala
            500                 505                 510

Ala Pro Gly Tyr Pro Gln Ser Thr Ala Arg Asp Trp Leu Val Cys Gly
        515                 520                 525
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Glu Pro Leu Ala Asp Ala Glu Asp Val Gly Pro Gly Pro Gln Gly Arg
    530             535             540
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Ser Gly Ala Gln Asp Gly Leu Ala Val Cys Ser Cys Thr Ser Asp Ala
545             550             555             560
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His Arg Leu Ala Leu Pro Ser Leu Leu Leu Thr Pro Leu Leu Trp
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Ala Leu Gly Thr Arg Gly Gly Cys Ala Ala Pro Glu Pro Ala Arg Arg
        35              40              45
```

```
Ala Glu Asp Leu Ser Leu Gly Val Glu Trp Leu Ser Arg Phe Gly Tyr
    50              55              60
```

```
Leu Pro Pro Ala Asp Pro Thr Thr Gly Gln Leu Gln Thr Gln Glu Glu
65              70              75              80
```

```
Leu Ser Lys Ala Ile Thr Ala Met Gln Gln Phe Gly Gly Leu Glu Ala
                85              90              95
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Thr Gly Ile Leu Asp Glu Ala Thr Leu Ala Leu Met Lys Thr Pro Arg
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Cys Ser Leu Pro Asp Leu Pro Val Leu Thr Gln Ala Arg Arg Arg Arg
        115             120             125
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```
Gln Ala Pro Ala Pro Thr Lys Trp Asn Lys Arg Asn Leu Ser Trp Arg
    130             135             140
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```
Val Arg Thr Phe Pro Arg Asp Ser Pro Leu Gly His Asp Thr Val Arg
145             150             155             160
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Ala Leu Met Tyr Tyr Ala Leu Lys Val Trp Ser Asp Ile Ala Pro Leu
                165             170             175
```

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Asn Phe His Glu Val Ala Gly Ser Thr Ala Asp Ile Gln Ile Asp Phe
            180             185             190
```

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Ser Lys Ala Asp His Asn Asp Gly Tyr Pro Phe Asp Gly Pro Gly Gly
        195             200             205
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Thr Val Ala His Ala Phe Phe Pro Gly His His Thr Ala Gly Asp
    210             215             220
```

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Thr His Phe Asp Asp Asp Glu Ala Trp Thr Phe Arg Ser Ser Asp Ala
225             230             235             240
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His Gly Met Asp Leu Phe Ala Val Ala Val His Glu Phe Gly His Ala
            245   250   255

Ile Gly Leu Ser His Val Ala Ala Ala His Ser Ile Met Arg Pro Tyr
            260   265   270

Tyr Gln Gly Pro Val Gly Asp Pro Leu Arg Tyr Gly Leu Pro Tyr Glu
            275   280   285

Asp Lys Val Arg Val Trp Gln Leu Tyr Gly Val Arg Glu Ser Val Ser
    290   295   300

Pro Thr Ala Gln Pro Glu Glu Pro Pro Leu Leu Pro Glu Pro Pro Asp
305   310   315   320

Asn Arg Ser Ser Ala Pro Pro Arg Lys Asp Val Pro His Arg Cys Ser
            325   330   335

Thr His Phe Asp Ala Val Ala Gln Ile Arg Gly Glu Ala Phe Phe Phe
            340   345   350

Lys Gly Lys Tyr Phe Trp Arg Leu Thr Arg Asp Arg His Leu Val Ser
            355   360   365

Leu Gln Pro Ala Gln Met His Arg Phe Trp Arg Gly Leu Pro Leu His
    370   375   380

Leu Asp Ser Val Asp Ala Val Tyr Glu Arg Thr Ser Asp His Lys Ile
385   390   395   400

Val Phe Phe Lys Gly Asp Arg Tyr Trp Val Phe Lys Asp Asn Asn Val
            405   410   415

Glu Glu Gly Tyr Pro Arg Pro Val Ser Asp Phe Ser Leu Pro Pro Gly
            420   425   430

Gly Ile Asp Ala Ala Phe Ser Trp Ala His Asn Asp Arg Thr Tyr Phe
    435   440   445

Phe Lys Asp Gln Leu Tyr Trp Arg Tyr Asp Asp His Thr Arg His Met
    450   455   460

Asp Pro Gly Tyr Pro Ala Gln Ser Pro Leu Trp Arg Gly Val Pro Ser
465   470   475   480

Thr Leu Asp Asp Ala Met Arg Trp Ser Asp Gly Ala Ser Tyr Phe Phe
            485   490   495

Arg Gly Gln Glu Tyr Trp Lys Val Leu Asp Gly Glu Leu Glu Val Ala
            500   505   510

Pro Gly Tyr Pro Gln Ser Thr Ala Arg Asp Trp Leu Val Cys Gly Asp
            515   520   525

Ser Gln Ala Asp Gly Ser Val Ala Ala Gly Val Asp Ala Ala Glu Gly
    530   535   540

Pro Arg Ala Pro Pro Gly Gln His Asp Gln Ser Arg Ser Glu Asp Gly
545   550   555   560

Tyr Glu Val Cys Ser Cys Thr Ser Gly Ala Ser Ser Pro Pro Gly Ala
            565   570   575

Pro Gly Pro Leu Val Ala Ala Thr Met Leu Leu Leu Leu Pro Pro Leu
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                             Met Gly Arg Arg Pro Arg Gly Pro Gly
                              1   5

tcc ccc cgg gga cct ggc cct cca cgc ccc ggg ccg ggg ctg cca cca 160
Ser Pro Arg Gly Pro Gly Pro Pro Arg Pro Gly Pro Gly Leu Pro Pro
10   15   20   25

ctg ctg ctt gta ctg gcg ctg gcg gcc cat ggg ggc tgc gca gcg ccc 208
Leu Leu Leu Val Leu Ala Leu Ala Ala His Gly Gly Cys Ala Ala Pro
          30   35   40

gcg ccc cgc gcg gag gac ctc agc ctc ggg gtg gag tgg cta agc agg 256
Ala Pro Arg Ala Glu Asp Leu Ser Leu Gly Val Glu Trp Leu Ser Arg
          45   50   55

ttt ggc tac ctg ccg cct gca gat ccg gca tca ggg cag cta cag acc 304
Phe Gly Tyr Leu Pro Pro Ala Asp Pro Ala Ser Gly Gln Leu Gln Thr
          60   65   70

cag gag gaa ctg tcc aaa gcg att act gcc atg cag cag ttt ggt ggt 352
Gln Glu Glu Leu Ser Lys Ala Ile Thr Ala Met Gln Gln Phe Gly Gly
      75   80   85

ctg gag acc act ggc atc cta gat gag gcc act ctg gcc ctg atg aaa 400
Leu Glu Thr Thr Gly Ile Leu Asp Glu Ala Thr Leu Ala Leu Met Lys
90   95   100   105

acc cct cga tgc tcc ctt ccg gac ctg ccc cct ggg gcc caa tcg aga 448
Thr Pro Arg Cys Ser Leu Pro Asp Leu Pro Pro Gly Ala Gln Ser Arg
          110   115   120

agg aag cgg cag act cca ccc cca acc aaa tgg agc aag agg aac ctt 496
Arg Lys Arg Gln Thr Pro Pro Pro Thr Lys Trp Ser Lys Arg Asn Leu
          125   130   135

tct tgg agg gtc cgg aca ttc cca cgg gac tca ccc ctg ggc cgg gat 544
Ser Trp Arg Val Arg Thr Phe Pro Arg Asp Ser Pro Leu Gly Arg Asp
          140   145   150

act gtg cgt gca ctc atg tac tac gcc ctc aaa gtc tgg agt gac atc 592
Thr Val Arg Ala Leu Met Tyr Tyr Ala Leu Lys Val Trp Ser Asp Ile
          155   160   165

aca ccc ttg aac ttc cac gag gta gcg ggc aac gcg gcg gac atc cag 640
Thr Pro Leu Asn Phe His Glu Val Ala Gly Asn Ala Ala Asp Ile Gln
170   175   180   185

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atc gac ttc tcc aag gcc gac cac aat gac ggc tac ccc ttc gat ggc    688
Ile Asp Phe Ser Lys Ala Asp His Asn Asp Gly Tyr Pro Phe Asp Gly
            190                 195                 200

cct ggt ggc acg gtg gcc cac gca ttc ttc cct ggt gac cac cac acg    736
Pro Gly Gly Thr Val Ala His Ala Phe Phe Pro Gly Asp His His Thr
            205                 210                 215

gca ggg gac acc cac ttt gat gac gat gag cca tgg acc ttc cgt tcc    784
Ala Gly Asp Thr His Phe Asp Asp Asp Glu Pro Trp Thr Phe Arg Ser
            220                 225                 230

tca gat gcc cac ggg atg gac ctg ttt gca gtg gcc gtc cat gag ttt    832
Ser Asp Ala His Gly Met Asp Leu Phe Ala Val Ala Val His Glu Phe
    235                 240                 245

ggt cat gcc att ggt ctg agc cat gtt gcc gcc cca agc tcc atc atg    880
Gly His Ala Ile Gly Leu Ser His Val Ala Ala Pro Ser Ser Ile Met
250                 255                 260                 265

caa ccg tac tac cag ggc ccc gtg ggt gac ccc gta cgc tat gga ctt    928
Gln Pro Tyr Tyr Gln Gly Pro Val Gly Asp Pro Val Arg Tyr Gly Leu
            270                 275                 280

ccc tat gag gac agg gtg cgt gtc tgg cag ttg tac ggt gtg cgg gaa    976
Pro Tyr Glu Asp Arg Val Arg Val Trp Gln Leu Tyr Gly Val Arg Glu
            285                 290                 295

tcc gtg tcc cct act gcc cag ctg gat acc cca gag ccc gag gag cca    1024
Ser Val Ser Pro Thr Ala Gln Leu Asp Thr Pro Glu Pro Glu Glu Pro
            300                 305                 310

ccc ctc ctg cca gag ccc ccc aac aat cgg tct agc act ccg ccc cag    1072
Pro Leu Leu Pro Glu Pro Pro Asn Asn Arg Ser Ser Thr Pro Pro Gln
            315                 320                 325

aag gac gtg cct cac agg tgc act gcc cac ttt gat gct gtg gcc cag    1120
Lys Asp Val Pro His Arg Cys Thr Ala His Phe Asp Ala Val Ala Gln
330                 335                 340                 345

att cga ggc gaa gca ttc ttt ttc aaa ggc aag tat ttc tgg agg ctg    1168
Ile Arg Gly Glu Ala Phe Phe Phe Lys Gly Lys Tyr Phe Trp Arg Leu
            350                 355                 360

acc cgg gac cga cac ttg gtg tcg ctg cag ccg gct caa atg cat cgc    1216
Thr Arg Asp Arg His Leu Val Ser Leu Gln Pro Ala Gln Met His Arg
            365                 370                 375

ttc tgg cgg ggc ctg ccg ctg cac ctg gac agt gtg gac gcc gtg tat    1264
Phe Trp Arg Gly Leu Pro Leu His Leu Asp Ser Val Asp Ala Val Tyr
            380                 385                 390

gag cgt acc agt gac cac aag att gtc ttc ttc aaa gga gac aga tac    1312
Glu Arg Thr Ser Asp His Lys Ile Val Phe Phe Lys Gly Asp Arg Tyr
    395                 400                 405

tgg gtg ttt aag gac aac aac gta gag gaa ggg tac ccg cga cct gtc    1360
Trp Val Phe Lys Asp Asn Asn Val Glu Glu Gly Tyr Pro Arg Pro Val
410                 415                 420                 425

tcc gac ttc agc ctc ccg cca ggt ggc atc gat gct gtc ttc tcc tgg    1408
Ser Asp Phe Ser Leu Pro Pro Gly Gly Ile Asp Ala Val Phe Ser Trp
            430                 435                 440
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gcc cac aat gac agg act tat ttc ttt aag gac cag ctg tac tgg cgc    1456
Ala His Asn Asp Arg Thr Tyr Phe Phe Lys Asp Gln Leu Tyr Trp Arg
                445                 450                 455

tat gat gac cac aca cgg cgc atg gac cct ggc tac cct gcc cag gga    1504
Tyr Asp Asp His Thr Arg Arg Met Asp Pro Gly Tyr Pro Ala Gln Gly
            460                 465                 470

ccc ctg tgg aga ggt gtc ccc agc atg ttg gat gat gcc atg cgc tgg    1552
Pro Leu Trp Arg Gly Val Pro Ser Met Leu Asp Asp Ala Met Arg Trp
        475                 480                 485

tct gat ggt gca tcc tat ttc ttc cga ggc cag gag tac tgg aaa gtg    1600
Ser Asp Gly Ala Ser Tyr Phe Phe Arg Gly Gln Glu Tyr Trp Lys Val
490                 495                 500                 505

ctg gat ggc gag ctg gaa gca gcc ccc ggg tac cca cag tct aca gcc    1648
Leu Asp Gly Glu Leu Glu Ala Ala Pro Gly Tyr Pro Gln Ser Thr Ala
                510                 515                 520

cgc gac tgg ctg gta tgc ggt gag ccg ctg gcg gat gcg gag gat gta    1696
Arg Asp Trp Leu Val Cys Gly Glu Pro Leu Ala Asp Ala Glu Asp Val
                525                 530                 535

ggg cct gga ccc cag ggc cgc agt ggg gcc caa gat ggt ctg gca gta    1744
Gly Pro Gly Pro Gln Gly Arg Ser Gly Ala Gln Asp Gly Leu Ala Val
            540                 545                 550

tgt tcc tgc act tca gac gca cac agg ttg gca ctg cca tct ctg ctg    1792
Cys Ser Cys Thr Ser Asp Ala His Arg Leu Ala Leu Pro Ser Leu Leu
        555                 560                 565

ctt ctg act cca ctg ctg tgg ggc ctg tgg acc tca gtc tct gcc aag    1840
Leu Leu Thr Pro Leu Leu Trp Gly Leu Trp Thr Ser Val Ser Ala Lys
570                 575                 580                 585

gca tcc tgagggcagt gctagccttg cggatcaagg agccagggga gcagggacac    1896
Ala Ser

actggccagt actcagcagg acttgtgctc caagcttccg gtccctcgct ccttccttcc 1956

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                                             Met Arg Arg Arg Ala
                                             1                   5

gcc cgg gga ccc ggc ccg ccg ccc cca ggg ccc gga ctc tcg cgg ctg   162
Ala Arg Gly Pro Gly Pro Pro Pro Pro Gly Pro Gly Leu Ser Arg Leu
              10               15                  20

ccg ctg ctg ccg ctg ccg ctg ctg ctg ctg ctg gcg ctg ggg acc cgc   210
Pro Leu Leu Pro Leu Pro Leu Leu Leu Leu Leu Ala Leu Gly Thr Arg
          25                   30                  35

ggg ggc tgc gcc gcg ccg gaa ccc gcg cgg cgc gcc gag gac ctc agc   258
Gly Gly Cys Ala Ala Pro Glu Pro Ala Arg Arg Ala Glu Asp Leu Ser
      40                   45                  50

ctg gga gtg gag tgg cta agc agg ttc ggt tac ctg ccc ccg gct gac   306
Leu Gly Val Glu Trp Leu Ser Arg Phe Gly Tyr Leu Pro Pro Ala Asp
  55                   60                  65
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ccc aca aca ggg cag ctg cag acg caa gag gag ctg tct aag gcc atc     354
Pro Thr Thr Gly Gln Leu Gln Thr Gln Glu Glu Leu Ser Lys Ala Ile
70              75                  80                  85

aca gcc atg cag cag ttt ggt ggc ctg gag gcc acc ggc atc ctg gac     402
Thr Ala Met Gln Gln Phe Gly Gly Leu Glu Ala Thr Gly Ile Leu Asp
            90                  95                  100

gag gcc acc ctg gcc ctg atg aaa acc cca cgc tgc tcc ctg cca gac     450
Glu Ala Thr Leu Ala Leu Met Lys Thr Pro Arg Cys Ser Leu Pro Asp
        105                 110                 115

ctc cct gtc ctg acc cag gct cgc agg aga cgc cag gct cca gcc ccc     498
Leu Pro Val Leu Thr Gln Ala Arg Arg Arg Arg Gln Ala Pro Ala Pro
        120                 125                 130

acc aag tgg aac aag agg aac ctg tcg tgg agg gtc cgg acg ttc cca     546
Thr Lys Trp Asn Lys Arg Asn Leu Ser Trp Arg Val Arg Thr Phe Pro
        135                 140                 145

cgg gac tca cca ctg ggg cac gac acg gtg cgt gca ctc atg tac tac     594
Arg Asp Ser Pro Leu Gly His Asp Thr Val Arg Ala Leu Met Tyr Tyr
150             155                 160                 165

gcc ctc aag gtc tgg agc gac att gcg ccc ctg aac ttc cac gag gtg     642
Ala Leu Lys Val Trp Ser Asp Ile Ala Pro Leu Asn Phe His Glu Val
                170                 175                 180

gcg ggc agc acc gcc gac atc cag atc gac ttc tcc aag gcc gac cat     690
Ala Gly Ser Thr Ala Asp Ile Gln Ile Asp Phe Ser Lys Ala Asp His
                185                 190                 195

aac gac ggc tac ccc ttc gac ggc ccc ggc ggc acc gtg gcc cac gcc     738
Asn Asp Gly Tyr Pro Phe Asp Gly Pro Gly Gly Thr Val Ala His Ala
                200                 205                 210

ttc ttc ccc ggc cac cac cac acc gcc ggg gac acc cac ttt gac gat     786
Phe Phe Pro Gly His His His Thr Ala Gly Asp Thr His Phe Asp Asp
        215                 220                 225

gac gag gcc tgg acc ttc cgc tcc tcg gat gcc cac ggg atg gac ctg     834
Asp Glu Ala Trp Thr Phe Arg Ser Ser Asp Ala His Gly Met Asp Leu
230             235                 240                 245

ttt gca gtg gct gtc cac gag ttt ggc cac gcc att ggg tta agc cat     882
Phe Ala Val Ala Val His Glu Phe Gly His Ala Ile Gly Leu Ser His
                250                 255                 260

gtg gcc gct gca cac tcc atc atg cgg ccg tac tac cag ggc ccg gtg     930
Val Ala Ala Ala His Ser Ile Met Arg Pro Tyr Tyr Gln Gly Pro Val
                265                 270                 275

ggt gac ccg ctg cgc tac ggg ctc ccc tac gag gac aag gtg cgc gtc     978
Gly Asp Pro Leu Arg Tyr Gly Leu Pro Tyr Glu Asp Lys Val Arg Val
        280                 285                 290

tgg cag ctg tac ggt gtg cgg gag tct gtg tct ccc acg gcg cag ccc    1026
Trp Gln Leu Tyr Gly Val Arg Glu Ser Val Ser Pro Thr Ala Gln Pro
        295                 300                 305

gag gag cct ccc ctg ctg ccg gag ccc cca gac aac cgg tcc agc gcc    1074
Glu Glu Pro Pro Leu Leu Pro Glu Pro Pro Asp Asn Arg Ser Ser Ala
310             315                 320                 325
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ccg ccc agg aag gac gtg ccc cac aga tgc agc act cac ttt gac gcg    1122
Pro Pro Arg Lys Asp Val Pro His Arg Cys Ser Thr His Phe Asp Ala
            330                 335                 340

gtg gcc cag atc cgg ggt gaa gct ttc ttc ttc aaa ggc aag tac ttc    1170
Val Ala Gln Ile Arg Gly Glu Ala Phe Phe Phe Lys Gly Lys Tyr Phe
            345                 350                 355

tgg cgg ctg acg cgg gac cgg cac ctg gtg tcc ctg cag ccg gca cag    1218
Trp Arg Leu Thr Arg Asp Arg His Leu Val Ser Leu Gln Pro Ala Gln
            360                 365                 370

atg cac cgc ttc tgg cgg ggc ctg ccg ctg cac ctg gac agc gtg gac    1266
Met His Arg Phe Trp Arg Gly Leu Pro Leu His Leu Asp Ser Val Asp
    375                 380                 385

gcc gtg tac gag cgc acc agc gac cac aag atc gtc ttc ttt aaa gga    1314
Ala Val Tyr Glu Arg Thr Ser Asp His Lys Ile Val Phe Phe Lys Gly
390                 395                 400                 405

gac agg tac tgg gtg ttc aag gac aat aac gta gag gaa gga tac ccg    1362
Asp Arg Tyr Trp Val Phe Lys Asp Asn Asn Val Glu Glu Gly Tyr Pro
            410                 415                 420

cgc ccc gtc tcc gac ttc agc ctc ccg cct ggc ggc atc gac gct gcc    1410
Arg Pro Val Ser Asp Phe Ser Leu Pro Pro Gly Gly Ile Asp Ala Ala
            425                 430                 435

ttc tcc tgg gcc cac aat gac agg act tat ttc ttt aag gac cag ctg    1458
Phe Ser Trp Ala His Asn Asp Arg Thr Tyr Phe Phe Lys Asp Gln Leu
            440                 445                 450

tac tgg cgc tac gat gac cac acg agg cac atg gac ccc ggc tac ccc    1506
Tyr Trp Arg Tyr Asp Asp His Thr Arg His Met Asp Pro Gly Tyr Pro
    455                 460                 465

gcc cag agc ccc ctg tgg agg ggt gtc ccc agc acg ctg gac gac gcc    1554
Ala Gln Ser Pro Leu Trp Arg Gly Val Pro Ser Thr Leu Asp Asp Ala
470                 475                 480                 485

atg cgc tgg tcc gac ggt gcc tcc tac ttc ttc cgt ggc cag gag tac    1602
Met Arg Trp Ser Asp Gly Ala Ser Tyr Phe Phe Arg Gly Gln Glu Tyr
            490                 495                 500

tgg aaa gtg ctg gat ggc gag ctg gag gtg gca ccc ggg tac cca cag    1650
Trp Lys Val Leu Asp Gly Glu Leu Glu Val Ala Pro Gly Tyr Pro Gln
            505                 510                 515

tcc acg gcc cgg gac tgg ctg gtg tgt gga gac tca cag gcc gat gga    1698
Ser Thr Ala Arg Asp Trp Leu Val Cys Gly Asp Ser Gln Ala Asp Gly
            520                 525                 530

tct gtg gct gcg ggc gtg gac gcg gca gag ggg ccc cgc gcc cct cca    1746
Ser Val Ala Ala Gly Val Asp Ala Ala Glu Gly Pro Arg Ala Pro Pro
            535                 540                 545

gga caa cat gac cag agc cgc tcg gag gac ggt tac gag gtc tgc tca    1794
Gly Gln His Asp Gln Ser Arg Ser Glu Asp Gly Tyr Glu Val Cys Ser
550                 555                 560                 565

tgc acc tct ggg gca tcc tct ccc ccg ggg gcc cca ggc cca ctg gtg    1842
Cys Thr Ser Gly Ala Ser Ser Pro Pro Gly Ala Pro Gly Pro Leu Val
            570                 575                 580
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gct gcc acc atg ctg ctg ctg ctg ccg cca ctg tca cca ggc gcc ctg    1890
Ala Ala Thr Met Leu Leu Leu Leu Pro Pro Leu Ser Pro Gly Ala Leu
            585                 590                 595

tgg aca gcg gcc cag gcc ctg acg cta tgacacacag cgcgagccca          1937
Trp Thr Ala Ala Gln Ala Leu Thr Leu
        600                 605

tgagaggaca gaggcggtgg acagcctgg ccacagaggg caaggactgt gccggagtcc   1997

ctggggggagg tgctggcgcg ggatgaggac gggccaccct ggcaccggaa ggccagcaga 2057

gggcacggcc cgccagggct gggcaggctc aggtggcaag gacggagctg tcccctagtg  2117

agggactgtg ttgactgacg agccgagggg tggccgctcc agaagggtgc ccagtcaggc  2177

cgcaccgccg ccagcctcct ccggccctgg agggagcatc tcgggctggg ggcccacccc  2237

tctctgtgcc ggcgccacca accccaccca cactgctgcc tggtgctccc gccggcccac  2297

agggcctccg tccccaggtc cccagtgggg cagccctccc cacagacgag cccccacat   2357

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gtaaaaaaaa aaaaaaaaaa a                                            2438


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Leu Cys Cys Leu Ala Ala Ala Ala Gly Ala Gly Lys Pro Ala Gly Ala
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Asp Ala Pro Phe Ala Gly Gln Asn Trp Leu Lys Ser Tyr Gly Tyr Leu
    50              55                  60

Leu Pro Tyr Glu Ser Arg Ala Ser Ala Leu His Ser Gly Lys Ala Leu
65              70                  75                  80

Gln Ser Ala Val Ser Thr Met Gln Gln Phe Tyr Gly Ile Pro Val Thr
                85              90                  95

Gly Val Leu Asp Gln Thr Thr Ile Glu Trp Met Lys Lys Pro Arg Cys
            100             105                 110

Gly Val Pro Asp His Pro His Leu Ser Arg Arg Arg Arg Asn Lys Arg
        115             120                 125

Tyr Ala Leu Thr Gly Gln Lys Trp Arg Gln Lys His Ile Thr Tyr Ser
    130             135                 140

Ile His Asn Tyr Thr Pro Lys Val Gly Glu Leu Asp Thr Arg Lys Ala
145             150             155                 160

Ile Arg Gln Ala Phe Asp Val Trp Gln Lys Val Thr Pro Leu Thr Phe
                        Page 11
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Glu Glu Val Pro Tyr His Glu Ile Lys Ser Asp Arg Lys Glu Ala Asp
        180   185   190

Ile Met Ile Phe Phe Ala Ser Gly Phe His Gly Asp Ser Ser Pro Phe
        195   200   205

Asp Gly Glu Gly Gly Phe Leu Ala His Ala Tyr Phe Pro Gly Pro Gly
    210   215   220

Ile Gly Gly Asp Thr His Phe Asp Ser Asp Glu Pro Trp Thr Leu Gly
225   230   235   240

Asn Ala Asn His Asp Gly Asn Asp Leu Phe Leu Val Ala Val His Glu
            245   250   255

Leu Gly His Ala Leu Gly Leu Glu His Ser Asn Asp Pro Ser Ala Ile
        260   265   270

Met Ala Pro Phe Tyr Gln Tyr Met Glu Thr His Asn Phe Lys Leu Pro
        275   280   285

Gln Asp Asp Leu Gln Gly Ile Gln Lys Ile Tyr Gly Pro Pro Ala Glu
    290   295   300

Pro Leu Glu Pro Thr Arg Pro Leu His Thr Leu Pro Val Arg Arg Ile
305   310   315   320

His Ser Pro Ser Glu Arg Lys His Glu Arg His Pro Arg Pro Pro Arg
            325   330   335

Pro Pro Leu Gly Asp Arg Pro Ser Thr Pro Gly Ala Lys Pro Asn Ile
        340   345   350

Cys Asp Gly Asn Phe Asn Thr Val Ala Leu Phe Arg Gly Glu Met Phe
        355   360   365

Val Phe Lys Asp Arg Trp Phe Trp Arg Leu Arg Asn Asn Arg Val Gln
    370   375   380

Glu Gly Tyr Pro Met Gln Ile Glu Gln Phe Trp Lys Gly Leu Pro Ala
385   390   395   400

Arg Ile Asp Ala Ala Tyr Glu Arg Ala Asp Gly Arg Phe Val Phe Phe
            405   410   415

Lys Gly Asp Lys Tyr Trp Val Phe Lys Glu Val Thr Val Glu Pro Gly
        420   425   430

Tyr Pro His Ser Leu Gly Glu Leu Gly Ser Cys Leu Pro Arg Glu Gly
        435   440   445

Ile Asp Thr Ala Leu Arg Trp Glu Pro Val Gly Lys Thr Tyr Phe Phe
    450   455   460

Lys Gly Glu Arg Tyr Trp Arg Tyr Ser Glu Glu Arg Arg Ala Thr Asp
465   470   475   480

Pro Gly Tyr Pro Lys Pro Ile Thr Val Trp Lys Gly Ile Pro Gln Ala
        485   490   495

Pro Gln Gly Ala Phe Ile Ser Lys Glu Gly Tyr Tyr Thr Tyr Phe Tyr
        500   505   510

Lys Gly Arg Asp Tyr Trp Lys Phe Asp Asn Gln Lys Leu Ser Val Glu
        515   520   525

Pro Gly Tyr Pro Arg Asn Ile Leu Arg Asp Trp Met Gly Cys Lys Gln
        530   535   540

Lys Glu Val Glu Arg Arg Lys Glu Arg Arg Leu Pro Gln Asp Asp Val
545   550   555   560

Asp Ile Met Val Thr Ile Asp Asp Val Pro Gly Ser Val Asn Ala Val
                565   570   575

Ala Val Val Val Pro Cys Thr Leu Ser Leu Cys Leu Leu Val Leu Leu
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Tyr Thr Ile Phe Gln Phe Lys Asn Lys Ala Gly Pro Gln Pro Val Thr
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Tyr Tyr Lys Arg Pro Val Gln Glu Trp Val
610   615

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        35   40   45

Ala Ala Arg Ala Ala Ala Ala Ala Ala Gly Ala Gly Asn Arg Ala Ala
        50   55   60

Val Ala Val Ala Val Ala Arg Ala Asp Glu Ala Glu Ala Pro Phe Ala
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Gly Gln Asn Trp Leu Lys Ser Tyr Gly Tyr Leu Leu Pro Tyr Asp Ser
                85   90   95

Arg Ala Ser Ala Leu His Ser Ala Lys Ala Leu Gln Ser Ala Val Ser
        100   105   110

Thr Met Gln Gln Phe Tyr Gly Ile Pro Val Thr Gly Val Leu Asp Gln
        115   120   125

Thr Thr Ile Glu Trp Met Lys Lys Pro Arg Cys Gly Val Pro Asp His
    130   135   140

Pro His Leu Ser Arg Arg Arg Arg Asn Lys Arg Tyr Ala Leu Thr Gly
145   150   155   160

Gln Lys Trp Arg Gln Lys His Ile Thr Tyr Ser Ile His Asn Tyr Thr
                165   170   175

Pro Lys Val Gly Glu Leu Asp Thr Arg Lys Ala Ile Arg Gln Ala Phe
        180   185   190

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Asp Val Trp Gln Lys Val Thr Pro Leu Thr Phe Glu Glu Val Pro Tyr
        195             200                 205

His Glu Ile Lys Ser Asp Arg Lys Glu Ala Asp Ile Met Ile Phe Phe
    210             215             220

Ala Ser Gly Phe His Gly Asp Ser Ser Pro Phe Asp Gly Glu Gly Gly
225             230             235             240

Phe Leu Ala His Ala Tyr Phe Pro Gly Pro Gly Ile Gly Gly Asp Thr
            245             250             255

His Phe Asp Ser Asp Glu Pro Trp Thr Leu Gly Asn Ala Asn His Asp
            260             265             270

Gly Asn Asp Leu Phe Leu Val Ala Val His Glu Leu Gly His Ala Leu
    275             280             285

Gly Leu Glu His Ser Ser Asp Pro Ser Ala Ile Met Ala Pro Phe Tyr
    290             295             300

Gln Tyr Met Glu Thr His Asn Phe Lys Leu Pro Gln Asp Asp Leu Gln
305             310             315             320

Gly Ile Gln Lys Ile Tyr Gly Pro Pro Ala Glu Pro Leu Glu Pro Thr
            325             330             335

Arg Pro Leu Pro Thr Leu Pro Val Arg Arg Ile His Ser Pro Ser Glu
            340             345             350

Arg Lys His Glu Arg Gln Pro Arg Pro Pro Arg Pro Pro Leu Gly Asp
    355             360             365

Arg Pro Ser Thr Pro Gly Thr Lys Pro Asn Ile Cys Asp Gly Asn Phe
    370             375             380

Asn Thr Val Ala Leu Phe Arg Gly Glu Met Phe Val Phe Lys Asp Arg
385             390             395             400

Trp Phe Trp Arg Leu Arg Asn Asn Arg Val Gln Glu Gly Tyr Pro Met
            405             410             415

Gln Ile Glu Gln Phe Trp Lys Gly Leu Pro Ala Arg Ile Asp Ala Ala
    420             425             430

Tyr Glu Arg Ala Asp Gly Arg Phe Val Phe Lys Gly Asp Lys Tyr
    435             440             445

Trp Val Phe Lys Glu Val Thr Val Glu Pro Gly Tyr Pro His Ser Leu
    450             455             460

Gly Glu Leu Gly Ser Cys Leu Pro Arg Glu Gly Ile Asp Thr Ala Leu
465             470             475             480

Arg Trp Glu Pro Val Gly Lys Thr Tyr Phe Phe Lys Gly Glu Arg Tyr
            485             490             495

Trp Arg Tyr Ser Glu Glu Arg Arg Ala Thr Asp Pro Gly Tyr Pro Lys
            500             505             510

Pro Ile Thr Val Trp Lys Gly Ile Pro Gln Ala Pro Gln Gly Ala Phe
    515             520             525

Ile Ser Lys Glu Gly Tyr Tyr Thr Tyr Phe Tyr Lys Gly Arg Asp Tyr
                        Page 14
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Trp Lys Phe Asp Asn Gln Lys Leu Ser Val Glu Pro Gly Tyr Pro Arg
545             550             555             560

Asn Ile Leu Arg Asp Trp Met Gly Cys Asn Gln Lys Glu Val Glu Arg
            565             570             575

Arg Lys Glu Arg Arg Leu Pro Gln Asp Asp Val Asp Ile Met Val Thr
            580             585             590

Ile Asn Asp Val Pro Gly Ser Val Asn Ala Val Ala Val Val Ile Pro
            595             600             605

Cys Ile Leu Ser Leu Cys Ile Leu Val Leu Val Tyr Thr Ile Phe Gln
    610             615             620

Phe Lys Asn Lys Thr Gly Pro Gln Pro Val Thr Tyr Tyr Lys Arg Pro
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Val Gln Glu Trp Val
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             Met Pro Arg Ser Arg Gly Gly Arg Ala Ala Pro Gly
             1               5               10

cag gcc tcg cgc tgg agc ggc tgg cgg gcc ccg ggg cgg ctg ctg ccg    158
Gln Ala Ser Arg Trp Ser Gly Trp Arg Ala Pro Gly Arg Leu Leu Pro
        15              20              25

ctg ctg ccc gcg ctc tgc tgc ctc gcg gcg gcg gcg ggg gcc ggg aag    206
Leu Leu Pro Ala Leu Cys Cys Leu Ala Ala Ala Ala Gly Ala Gly Lys
    30              35              40

ccg gcc ggg gcg gac gcg ccc ttc gct ggg cag aac tgg tta aaa tca    254
Pro Ala Gly Ala Asp Ala Pro Phe Ala Gly Gln Asn Trp Leu Lys Ser
45              50              55              60

tat ggc tat ctg ctt ccc tat gag tcg cgg gca tct gcg ttg cat tct    302
Tyr Gly Tyr Leu Leu Pro Tyr Glu Ser Arg Ala Ser Ala Leu His Ser
            65              70              75

ggg aag gcc ttg cag tcc gcg gtc tcc act atg cag cag ttt tac ggg    350
Gly Lys Ala Leu Gln Ser Ala Val Ser Thr Met Gln Gln Phe Tyr Gly
        80              85              90

atc cca gtc acc ggt gtg ttg gat cag aca aca atc gag tgg atg aag    398
Ile Pro Val Thr Gly Val Leu Asp Gln Thr Thr Ile Glu Trp Met Lys
        95              100             105

aaa cct cga tgt ggc gtc cct gat cat ccc cac ttg agc agg agg agg    446
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Lys Pro Arg Cys Gly Val Pro Asp His Pro His Leu Ser Arg Arg Arg
    110                 115             120

aga aat aag cga tat gcc cta act gga cag aag tgg agg cag aaa cac    494
Arg Asn Lys Arg Tyr Ala Leu Thr Gly Gln Lys Trp Arg Gln Lys His
125                 130             135             140

atc acc tac agc att cac aat tat acc cca aag gtg ggt gag ctg gac    542
Ile Thr Tyr Ser Ile His Asn Tyr Thr Pro Lys Val Gly Glu Leu Asp
                145             150             155

aca cgg aag gct att cgt cag gct ttc gat gtg tgg cag aag gtg act    590
Thr Arg Lys Ala Ile Arg Gln Ala Phe Asp Val Trp Gln Lys Val Thr
                160             165             170

cca ctg acc ttt gaa gag gtg cca tac cat gag atc aaa agt gac cgg    638
Pro Leu Thr Phe Glu Glu Val Pro Tyr His Glu Ile Lys Ser Asp Arg
            175             180             185

aag gag gca gac atc atg atc ttc ttt gct tct ggt ttc cat ggt gac    686
Lys Glu Ala Asp Ile Met Ile Phe Phe Ala Ser Gly Phe His Gly Asp
        190             195             200

agc tcc cca ttt gat ggg gaa ggg gga ttc cta gcc cat gcc tac ttt    734
Ser Ser Pro Phe Asp Gly Glu Gly Gly Phe Leu Ala His Ala Tyr Phe
205             210             215             220

cct ggc cca ggg atc gga gga gac act cac ttt gat tca gat gaa ccc    782
Pro Gly Pro Gly Ile Gly Gly Asp Thr His Phe Asp Ser Asp Glu Pro
                225             230             235

tgg acg cta gga aat gcc aac cat gat ggc aat gac ctc ttc ctg gtg    830
Trp Thr Leu Gly Asn Ala Asn His Asp Gly Asn Asp Leu Phe Leu Val
                240             245             250

gcc gtg cat gaa ctg ggc cat gca ctg ggc ttg gag cac tct aat gac    878
Ala Val His Glu Leu Gly His Ala Leu Gly Leu Glu His Ser Asn Asp
        255             260             265

ccc agt gct atc atg gct ccc ttc tac caa tac atg gag aca cac aac    926
Pro Ser Ala Ile Met Ala Pro Phe Tyr Gln Tyr Met Glu Thr His Asn
270             275             280

ttc aag cta ccg cag gac gat ctc cag ggc atc cag aag att tac gga    974
Phe Lys Leu Pro Gln Asp Asp Leu Gln Gly Ile Gln Lys Ile Tyr Gly
285             290             295             300

ccc cca gct gag cct ctg gag ccc aca agg ccc ctc cat aca ctc ccg   ·1022
Pro Pro Ala Glu Pro Leu Glu Pro Thr Arg Pro Leu His Thr Leu Pro
                305             310             315

gtc cgc agg atc cac tcg ccg tct gag agg aag cac gag cgg cac cca    1070
Val Arg Arg Ile His Ser Pro Ser Glu Arg Lys His Glu Arg His Pro
                320             325             330

agg ccc cca cgg ccg ccc ctt ggg gac cgg cca tcc act cca ggt gcc    1118
Arg Pro Pro Arg Pro Pro Leu Gly Asp Arg Pro Ser Thr Pro Gly Ala
            335             340             345

aaa ccc aac atc tgc gat ggc aac ttc aac aca gtg gcc ctc ttc cga    1166
Lys Pro Asn Ile Cys Asp Gly Asn Phe Asn Thr Val Ala Leu Phe Arg
350             355             360

ggg gag atg ttt gtg ttc aag gat cgc tgg ttc tgg cgc ctg cgc aat    1214
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Gly Glu Met Phe Val Phe Lys Asp Arg Trp Phe Trp Arg Leu Arg Asn
365                 370             375                 380

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Asn Arg Val Gln Glu Gly Tyr Pro Met Gln Ile Glu Gln Phe Trp Lys
                385                 390                 395

ggc ctg ccc gcc cgc ata gac gca gcc tat gaa aga gct gac ggg aga   1310
Gly Leu Pro Ala Arg Ile Asp Ala Ala Tyr Glu Arg Ala Asp Gly Arg
                400                 405                 410

ttc gtc ttc ttc aaa gga gac aag tac tgg gtt ttc aaa gaa gtg acg   1358
Phe Val Phe Phe Lys Gly Asp Lys Tyr Trp Val Phe Lys Glu Val Thr
            415                 420                 425

gtg gaa cct ggg tac ccc cac agc ttg ggg gag ctg gga agc tgc ctg   1406
Val Glu Pro Gly Tyr Pro His Ser Leu Gly Glu Leu Gly Ser Cys Leu
        430                 435                 440

ccc cgt gaa gga att gac aca gct ctg cgc tgg gaa cct gtg ggc aaa   1454
Pro Arg Glu Gly Ile Asp Thr Ala Leu Arg Trp Glu Pro Val Gly Lys
445                 450                 455                 460

acc tac ttc ttc aaa ggc gaa cgg tac tgg cgc tac agc gag gag cgg   1502
Thr Tyr Phe Phe Lys Gly Glu Arg Tyr Trp Arg Tyr Ser Glu Glu Arg
                465                 470                 475

cga gcc aca gac cct ggc tac ccc aag ccc atc acc gtg tgg aag ggc   1550
Arg Ala Thr Asp Pro Gly Tyr Pro Lys Pro Ile Thr Val Trp Lys Gly
                480                 485                 490

atc ccg cag gct ccg caa ggg gcc ttc atc agc aag gaa gga tat tac   1598
Ile Pro Gln Ala Pro Gln Gly Ala Phe Ile Ser Lys Glu Gly Tyr Tyr
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acc tac ttc tac aaa ggc cgg gac tac tgg aag ttt gac aac cag aaa   1646
Thr Tyr Phe Tyr Lys Gly Arg Asp Tyr Trp Lys Phe Asp Asn Gln Lys
            510                 515                 520

ctg agc gtg gag cca ggc tac cca cgc aac atc ctg cgt gac tgg atg   1694
Leu Ser Val Glu Pro Gly Tyr Pro Arg Asn Ile Leu Arg Asp Trp Met
525                 530                 535                 540

ggc tgc aag cag aag gag gta gag cgg cgt aag gag cgg agg ctg ccc   1742
Gly Cys Lys Gln Lys Glu Val Glu Arg Arg Lys Glu Arg Arg Leu Pro
                545                 550                 555

cag gat gat gtg gac atc atg gtg acc atc gat gac gtg cca ggc tct   1790
Gln Asp Asp Val Asp Ile Met Val Thr Ile Asp Asp Val Pro Gly Ser
                560                 565                 570

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Val Asn Ala Val Ala Val Val Val Pro Cys Thr Leu Ser Leu Cys Leu
            575                 580                 585

ctg gtg ctg ctc tac act atc ttc caa ttc aag aac aag gcg ggt cct   1886
Leu Val Leu Leu Tyr Thr Ile Phe Gln Phe Lys Asn Lys Ala Gly Pro
            590                 595                 600

cag ccc gtc acc tac tat aag cgg ccg gtc cag gag tgg gta   1928
Gln Pro Val Thr Tyr Tyr Lys Arg Pro Val Gln Glu Trp Val
605                 610                 615

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ccg ccg ccg ccg ggc cag gcc ccg cgc tgg agc cgc tgg cgg gtc cct   96
Pro Pro Pro Pro Gly Gln Ala Pro Arg Trp Ser Arg Trp Arg Val Pro
                20   25   30

ggg cgg ctg ctg ctg ctg ctg ctg ccc gcg ctc tgc tgc ctc ccg ggc   144
Gly Arg Leu Leu Leu Leu Leu Leu Pro Ala Leu Cys Cys Leu Pro Gly
            35   40   45

gcc gcg cgg gcg gcg gcg gcg gcg gcg ggg gca ggg aac cgg gca gcg   192
Ala Ala Arg Ala Ala Ala Ala Ala Ala Gly Ala Gly Asn Arg Ala Ala
        50   55   60

gtg gcg gtg gcg gtg gcg cgg gcg gac gag gcg gag gcg ccc ttc gcc   240
Val Ala Val Ala Val Ala Arg Ala Asp Glu Ala Glu Ala Pro Phe Ala
65   70   75   80

ggg cag aac tgg tta aag tcc tat ggc tat ctg ctt ccc tat gac tca   288
Gly Gln Asn Trp Leu Lys Ser Tyr Gly Tyr Leu Leu Pro Tyr Asp Ser
                85   90   95

cgg gca tct gcg ctg cac tca gcg aag gcc ttg cag tcg gca gtc tcc   336
Arg Ala Ser Ala Leu His Ser Ala Lys Ala Leu Gln Ser Ala Val Ser
            100   105   110

act atg cag cag ttt tac ggg atc ccg gtc acc ggt gtg ttg gat cag   384
Thr Met Gln Gln Phe Tyr Gly Ile Pro Val Thr Gly Val Leu Asp Gln
        115   120   125

aca acg atc gag tgg atg aag aaa ccc cga tgt ggt gtc cct gat cac   432
Thr Thr Ile Glu Trp Met Lys Lys Pro Arg Cys Gly Val Pro Asp His
    130   135   140

ccc cac tta agc cgt agg cgg aga aac aag cgc tat gcc ctg act gga   480
Pro His Leu Ser Arg Arg Arg Arg Asn Lys Arg Tyr Ala Leu Thr Gly
145   150   155   160

cag aag tgg agg caa aaa cac atc acc tac agc att cac aac tat acc   528
Page 19

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Gln Lys Trp Arg Gln Lys His Ile Thr Tyr Ser Ile His Asn Tyr Thr
              165              170                  175

cca aaa gtg ggt gag cta gac acg cgg aaa gct att cgc cag gct ttc    576
Pro Lys Val Gly Glu Leu Asp Thr Arg Lys Ala Ile Arg Gln Ala Phe
          180              185                  190

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His Phe Asp Ser Asp Glu Pro Trp Thr Leu Gly Asn Ala Asn His Asp
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Gly Asn Asp Leu Phe Leu Val Ala Val His Glu Leu Gly His Ala Leu
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Arg Arg Arg Lys Arg Tyr Ala Leu Thr Gly Arg Lys Trp Asn Asn His His Leu
            130                    135                    140
Thr Phe Ser Ile Gln Asn Tyr Thr Glu Lys Leu Gly Trp Tyr His Ser Met Glu
145                    150                    155                    160
Ala Val Arg Arg Ala Phe Arg Val Trp Glu Gln Ala Thr Pro Leu Val Phe Gln
        165                    170                    175                    180
Glu Val Pro Tyr Glu Asp Ile Arg Leu Arg Arg Gln Lys Glu Ala Asp Ile Met
                185                    190                    195
Val Leu Phe Ala Ser Gly Phe His Gly Asp Ser Ser Pro Phe Asp Gly Thr Gly
    200                    205                    210                    215
```
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Gly Phe Leu Ala His Ala Tyr Phe Pro Gly Pro Gly Leu Gly Gly Asp Thr His
        220   225   230
Phe Asp Ala Asp Glu Pro Trp Thr Phe Ser Ser Thr Asp Leu His Gly Asn Asn
235   240   245   250
Leu Phe Leu Val Ala Val His Glu Leu Gly His Ala Leu Gly Leu Glu His Ser
        255   260   265   270
Ser Asn Pro Asn Ala Ile Met Ala Pro Phe Tyr Gln Trp Lys Asp Val Asp Asn
            275   280   285
Phe Lys Leu Pro Glu Asp Asp Leu Arg Gly Ile Gln Gln Leu Tyr Gly Thr Pro
    290   295   300   305
Asp Gly Gln Pro Gln Pro Thr Gln Pro Leu Pro Thr Val Thr Pro Arg Arg Pro
            310   315   320
Gly Arg Pro Asp His Arg Pro Pro Arg Pro Pro Gln Pro Pro Pro Gly Gly
325   330   335   340
Lys Pro Glu Arg Pro Pro Lys Pro Gly Pro Pro Val Gln Pro Arg Ala Thr Glu
    345   350   355   360
Arg Pro Asp Gln Tyr Gly Pro Asn Ile Cys Asp Gly Asp Phe Asp Thr Val Ala
            365   370   375
Met Leu Arg Gly Glu Met Phe Val Phe Lys Gly Arg Trp Phe Trp Arg Val Arg
380   385   390   395
His Asn Arg Val Leu Asp Asn Tyr Pro Met Pro Ile Gly His Phe Trp Arg Gly
        400   405   410
Leu Pro Gly Asp Ile Ser Ala Ala Tyr Glu Arg Gln Asp Gly Arg Phe Val Phe
415   420   425   430
Phe Lys Gly Asp Arg Tyr Trp Leu Phe Arg Glu Ala Asn Leu Glu Pro Gly Tyr
    435   440   445   450
Pro Gln Pro Leu Thr Ser Tyr Gly Leu Gly Ile Pro Tyr Asp Arg Ile Asp Thr
            455   460   465
Ala Ile Trp Trp Glu Pro Thr Gly His Thr Phe Phe Phe Gln Glu Asp Arg Tyr
    470   475   480   485
Trp Arg Phe Asn Glu Glu Thr Gln Arg Gly Asp Pro Gly Tyr Pro Lys Pro Ile
            490   495   500
Ser Val Trp Gln Gly Ile Pro Ala Ser Pro Lys Gly Ala Phe Leu Ser Asn Asp
505   510   515   520
Ala Ala Tyr Thr Tyr Phe Tyr Lys Gly Thr Lys Tyr Trp Lys Phe Asp Asn Glu
        525   530   535   540
Arg Leu Arg Met Glu Pro Gly Tyr Pro Lys Ser Ile Leu Arg Asp Phe Met Gly
            545   550   555
Cys Gln Glu His Val Glu Pro Gly Pro Arg Trp Pro Asp Val Ala Arg Pro Pro
    560   565   570   575
Phe Asn Pro His Gly Gly Ala Glu Pro Gly Ala Asp Ser Ala Glu Gly Asp Val
            580   585   590
Gly Asp Gly Asp Gly Asp Phe Gly Ala Gly Val Asn Lys Asp Gly Gly Ser Arg
595   600   605   610
Val Val Val Gln Met Glu Glu Val Ala Arg Thr Val Asn Val Val Met Val Leu
    615   620   625   630
Val Pro Leu Leu Leu Leu Cys Val Leu Gly Leu Thr Tyr Ala Leu Val Gln
            635   640   645
Met Gln Arg Lys Gly Ala Pro Arg Val Leu Leu Tyr Cys Lys Arg Ser Leu Gln
    650   655   660   665
Glu Trp Val

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<212> PRT
<213> Homo sapiens

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Met Ile Leu Leu Thr Phe Ser Thr Gly Arg Arg Leu Asp Phe Val His His Ser
  1   5   10   15
Gly Val Phe Phe Leu Gln Thr Leu Leu Trp Ile Leu Cys Ala Thr Val Cys Gly
    20   25   30   35
Thr Glu Gln Tyr Phe Asn Val Glu Val Trp Leu Gln Lys Tyr Gly Tyr Leu Pro
            40   45   50

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Pro Thr Asp Pro Arg Met Ser Val Leu Arg Ser Ala Glu Thr Met Gln Ser Ala
55   60   65   70

Leu Ala Ala Met Gln Gln Phe Tyr Gly Ile Asn Met Thr Gly Lys Val Asp Arg
    75   80   85   90

Asn Thr Ile Asp Trp Met Lys Lys Pro Arg Cys Gly Val Pro Asp Gln Thr Arg
                95   100   105

Gly Ser Ser Lys Phe His Ile Arg Arg Lys Arg Tyr Ala Leu Thr Gly Gln Lys
    110   115   120   125

Trp Gln His Lys His Ile Thr Tyr Ser Ile Lys Asn Val Thr Pro Lys Val Gly
            130   135   140

Asp Pro Glu Thr Arg Lys Ala Ile Arg Arg Ala Phe Asp Val Trp Gln Asn Val
145   150   155   160

Thr Pro Leu Thr Phe Glu Glu Val Pro Tyr Ser Glu Leu Glu Asn Gly Lys Arg
    165   170   175   180

Asp Val Asp Ile Thr Ile Ile Phe Ala Ser Gly Phe His Gly Asp Ser Ser Pro
            185   190   195

Phe Asp Gly Glu Gly Gly Phe Leu Ala His Ala Tyr Phe Pro Gly Pro Gly Ile
    200   205   210   215

Gly Gly Asp Thr His Phe Asp Ser Asp Glu Pro Trp Thr Leu Gly Asn Pro Asn
        220   225   230

His Asp Gly Asn Asp Leu Phe Leu Val Ala Val His Glu Leu Gly His Ala Leu
235   240   245   250

Gly Leu Glu His Ser Asn Asp Pro Thr Ala Ile Met Ala Pro Phe Tyr Gln Tyr
    255   260   265   270

Met Glu Thr Asp Asn Phe Lys Leu Pro Asn Asp Asp Leu Gln Gly Ile Gln Lys
            275   280   285

Ile Tyr Gly Pro Pro Asp Lys Ile Pro Pro Pro Thr Arg Pro Leu Pro Thr Val
    290   295   300   305

Pro Pro His Arg Ser Ile Pro Pro Ala Asp Pro Arg Lys Asn Asp Arg Pro Lys
            310   315   320

Pro Pro Arg Pro Pro Thr Gly Arg Pro Ser Tyr Pro Gly Ala Lys Pro Asn Ile
325   330   335   340

Cys Asp Gly Asn Phe Asn Thr Leu Ala Ile Leu Arg Arg Glu Met Phe Val Phe
    345   350   355   360

Lys Asp Gln Trp Phe Trp Arg Val Arg Asn Asn Arg Val Met Asp Gly Tyr Pro
            365   370   375

Met Gln Ile Thr Tyr Phe Trp Arg Gly Leu Pro Pro Ser Ile Asp Ala Val Tyr
380   385   390   395

Glu Asn Ser Asp Gly Asn Phe Val Phe Phe Lys Gly Asn Lys Tyr Trp Val Phe
        400   405   410

Lys Asp Thr Thr Leu Gln Pro Gly Tyr Pro His Asp Leu Ile Thr Leu Gly Ser
415   420   425   430

Gly Ile Pro Pro His Gly Ile Asp Ser Ala Ile Trp Trp Glu Asp Val Gly Lys
    435   440   445   450

Thr Tyr Phe Phe Lys Gly Asp Arg Tyr Trp Arg Tyr Ser Glu Glu Met Lys Thr
            455   460   465

Met Asp Pro Gly Tyr Pro Lys Pro Ile Thr Val Trp Lys Gly Ile Pro Glu Ser
470   475   480   485

Pro Gln Gly Ala Phe Val His Lys Glu Asn Gly Phe Thr Tyr Phe Tyr Lys Gly
        490   495   500

Lys Glu Tyr Trp Lys Phe Asn Asn Gln Ile Leu Lys Val Glu Pro Gly Tyr Pro
505   510   515   520

Arg Ser Ile Leu Lys Asp Phe Met Gly Cys Asp Gly Pro Thr Asp Arg Val Lys
    525   530   535   540

Glu Gly His Ser Pro Pro Asp Asp Val Asp Ile Val Ile Lys Leu Asp Asn Thr
        545   550   555

Ala Ser Thr Val Lys Ala Ile Ala Ile Val Ile Pro Cys Ile Leu Ala Leu Cys
560   565   570   575

Leu Leu Val Leu Val Tyr Thr Val Phe Gln Phe Lys Arg Lys Gly Thr Pro Arg
        580   585   590

His Ile Leu Tyr Cys Lys Arg Ser Met Gln Glu Trp Val
595   600   605

<210> 26

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<211> 605
<212> PRT
<213> Homo sapiens

<400> 26
Met Arg Arg Arg Ala Ala Arg Gly Pro Gly Pro Pro Pro Gly Pro Gly Leu
1   5   10   15
Ser Arg Leu Pro Leu Leu Pro Leu Pro Leu Leu Leu Leu Ala Leu Gly Thr
    20   25   30   35
Arg Gly Gly Cys Ala Ala Pro Glu Pro Ala Arg Arg Ala Glu Asp Leu Ser Leu
            40   45   50
Gly Val Glu Trp Leu Ser Arg Phe Gly Tyr Leu Pro Pro Ala Asp Pro Thr Thr
55   60   65   70
Gly Gln Leu Gln Thr Gln Glu Glu Leu Ser Lys Ala Ile Thr Ala Met Gln Gln
        75   80   85   90
Phe Gly Gly Leu Glu Ala Thr Gly Ile Leu Asp Glu Ala Thr Leu Ala Leu Met
            95   100   105
Lys Thr Pro Arg Cys Ser Leu Pro Asp Leu Pro Val Leu Thr Gln Ala Arg Arg
    110   115   120   125
Arg Arg Gln Ala Pro Ala Pro Thr Lys Trp Asn Lys Arg Asn Leu Ser Trp Arg
            130   135   140
Val Arg Thr Phe Pro Arg Asp Ser Pro Leu Gly His Asp Thr Val Arg Ala Leu
145   150   155   160
Met Tyr Tyr Ala Leu Lys Val Trp Ser Asp Ile Ala Pro Leu Asn Phe His Glu
        165   170   175   180
Val Ala Gly Ser Thr Ala Asp Ile Gln Ile Asp Phe Ser Lys Ala Asp His Asn
            185   190   195
Asp Gly Tyr Pro Phe Asp Ala Arg Arg His Arg Ala His Ala Phe Phe Pro Gly
    200   205   210   215
His His His Thr Ala Gly Tyr Thr His Phe Asn Asp Asp Glu Ala Trp Thr Phe
        220   225   230
Arg Ser Ser Asp Ala His Gly Met Asp Leu Phe Ala Val Ala Val His Glu Phe
235   240   245   250
Gly His Ala Ile Gly Leu Ser His Val Ala Ala Ala His Ser Ile Met Arg Pro
        255   260   265   270
Tyr Tyr Gln Gly Pro Val Gly Asp Pro Leu Arg Tyr Gly Leu Pro Tyr Glu Asp
            275   280   285
Lys Val Arg Val Trp Gln Leu Tyr Gly Val Arg Glu Ser Val Ser Pro Thr Ala
    290   295   300   305
Gln Pro Glu Glu Pro Pro Leu Leu Pro Glu Pro Pro Asp Asn Arg Ser Ser Ala
            310   315   320
Pro Pro Arg Lys Asp Val Pro His Arg Cys Ser Thr His Phe Asp Ala Val Ala
325   330   335   340
Gln Ile Arg Gly Glu Ala Phe Phe Phe Lys Gly Lys Tyr Phe Trp Arg Leu Thr
        345   350   355   360
Arg Asp Arg His Leu Val Ser Leu Gln Pro Ala Gln Met His Arg Phe Trp Arg
            365   370   375
Gly Leu Pro Leu His Leu Asp Ser Val Asp Ala Val Tyr Glu Arg Thr Ser Asp
    380   385   390   395
His Lys Ile Val Phe Phe Lys Gly Asp Arg Tyr Trp Val Phe Lys Asp Asn Asn
            400   405   410
Val Glu Glu Gly Tyr Pro Arg Pro Val Ser Asp Phe Ser Leu Pro Pro Gly Gly
415   420   425   430
Ile Asp Ala Ala Phe Ser Trp Ala His Asn Asp Arg Thr Tyr Phe Phe Lys Asp
        435   440   445   450
Gln Leu Tyr Trp Arg Tyr Asp Asp His Thr Arg His Met Asp Pro Gly Tyr Pro
            455   460   465
Ala Gln Ser Pro Leu Trp Arg Gly Val Pro Ser Thr Leu Asp Asp Ala Met Arg
    470   475   480   485
Trp Ser Asp Gly Ala Ser Tyr Phe Phe Arg Gly Gln Glu Tyr Trp Lys Val Leu
        490   495   500
Asp Gly Glu Leu Glu Val Ala Pro Gly Tyr Pro Gln Ser Thr Ala Arg Asp Trp
505   510   515   520
Leu Val Cys Gly Asp Ser Gln Ala Asp Gly Ser Val Ala Ala Gly Val Asp Ala
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                525                    530                    535                    540
Ala Glu Gly Pro Arg Ala Pro Pro Gly Gln His Asp Gln Ser Arg Ser Glu Asp
                     545                    550                    555
Gly Tyr Glu Val Cys Ser Cys Thr Ser Gly Ala Ser Ser Pro Pro Gly Ala Pro
    560                    565                    570                    575
Gly Pro Leu Val Ala Ala Thr Met Leu Leu Leu Leu Pro Pro Leu Ser Pro Gly
                580                    585                    590
Ala Leu Trp Thr Ala Ala Gln Ala Leu Thr Leu
595                    600                    605
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Met Pro Arg Ser Arg Gly Gly Arg Ala Ala Pro Gly Pro Pro Pro Pro Pro Pro
    1                   5                   10                  15
Pro Pro Gly Gln Ala Pro Arg Trp Ser Arg Trp Arg Val Pro Gly Arg Leu Leu
    20                  25                  30                  35
Leu Leu Leu Leu Pro Ala Leu Cys Cys Leu Pro Gly Ala Ala Arg Ala Ala Ala
                40                  45                  50
Ala Ala Ala Gly Ala Gly Asn Arg Ala Ala Val Ala Val Ala Val Ala Arg Ala
55                  60                  65                  70
Asp Glu Ala Glu Ala Pro Phe Ala Gly Gln Asn Trp Leu Lys Ser Tyr Gly Tyr
    75                  80                  85                  90
Leu Leu Pro Tyr Asp Ser Arg Ala Ser Ala Leu His Ser Ala Lys Ala Leu Gln
                95                  100                 105
Ser Ala Val Ser Thr Met Gln Gln Phe Tyr Gly Ile Pro Val Thr Gly Val Leu
    110                 115                 120                 125
Asp Gln Thr Thr Ile Glu Trp Met Lys Lys Pro Arg Cys Gly Val Pro Asp His
                130                 135                 140
Pro His Leu Ser Arg Arg Arg Arg Asn Lys Arg Tyr Ala Leu Thr Gly Gln Lys
145                 150                 155                 160
Trp Arg Gln Lys His Ile Thr Tyr Ser Ile His Asn Tyr Thr Pro Lys Val Gly
    165                 170                 175                 180
Glu Leu Asp Thr Arg Lys Ala Ile Arg Gln Ala Phe Asp Val Trp Gln Lys Val
                185                 190                 195
Thr Pro Leu Thr Phe Glu Glu Val Pro Tyr His Glu Ile Lys Ser Asp Arg Lys
    200                 205                 210                 215
Glu Ala Asp Ile Met Ile Phe Phe Ala Ser Gly Phe His Gly Asp Ser Ser Pro
                220                 225                 230
Phe Asp Gly Glu Gly Gly Phe Leu Ala His Ala Tyr Phe Pro Gly Pro Gly Ile
235                 240                 245                 250
Gly Gly Asp Thr His Phe Asp Ser Asp Glu Pro Trp Thr Leu Gly Asn Ala Asn
                255                 260                 265                 270
His Asp Gly Asn Asp Leu Phe Leu Val Ala Val His Glu Leu Gly His Ala Leu
                275                 280                 285
Gly Leu Glu His Ser Ser Asp Pro Ser Ala Ile Met Ala Pro Phe Tyr Gln Tyr
    290                 295                 300                 305
Met Glu Thr His Asn Phe Lys Leu Pro Gln Asp Asp Leu Gln Gly Ile Gln Lys
                310                 315                 320
Ile Tyr Gly Pro Pro Ala Glu Pro Leu Glu Pro Thr Arg Pro Leu Pro Thr Leu
325                 330                 335                 340
Pro Val Arg Arg Ile His Ser Pro Ser Glu Arg Lys His Glu Arg Gln Pro Arg
    345                 350                 355                 360
Pro Pro Arg Pro Pro Leu Gly Asp Arg Pro Ser Thr Pro Gly Thr Lys Pro Asn
                365                 370                 375
Ile Cys Asp Gly Asn Phe Asn Thr Val Ala Leu Phe Arg Gly Glu Met Phe Val
    380                 385                 390                 395
Phe Lys Asp Arg Trp Phe Trp Arg Leu Arg Asn Asn Arg Val Gln Glu Gly Tyr
                400                 405                 410
Pro Met Gln Ile Glu Gln Phe Trp Lys Gly Leu Pro Ala Arg Ile Asp Ala Ala
415                 420                 425                 430
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Tyr Glu Arg Ala Asp Gly Arg Phe Val Phe Lys Gly Asp Lys Tyr Trp Val
        435                     440                 445                 450
Phe Lys Glu Val Thr Val Glu Pro Gly Tyr Pro His Ser Leu Gly Glu Leu Gly
                455             460                 465
Ser Cys Leu Pro Arg Glu Gly Ile Asp Thr Ala Leu Arg Trp Glu Pro Val Gly
    470             475                 480                 485
Lys Thr Tyr Phe Phe Lys Gly Glu Arg Tyr Trp Arg Tyr Ser Glu Glu Arg Arg
            490             495                 500
Ala Thr Asp Pro Gly Tyr Pro Lys Pro Ile Thr Val Trp Lys Gly Ile Pro Gln
505             510                 515                 520
Ala Pro Gln Gly Ala Phe Ile Ser Lys Glu Gly Tyr Tyr Thr Tyr Phe Tyr Lys
        525             530                 535                 540
Gly Arg Asp Tyr Trp Lys Phe Asp Asn Gln Lys Leu Ser Val Glu Pro Gly Tyr
            545                 550                 555
Pro Arg Asn Ile Leu Arg Asp Trp Met Gly Cys Asn Gln Lys Glu Val Glu Arg
    560             565                 570                 575
Arg Lys Glu Arg Arg Leu Pro Gln Asp Asp Val Asp Ile Met Val Thr Ile Asn
        580             585                 590
Asp Val Pro Gly Ser Val Asn Ala Val Ala Val Val Ile Pro Cys Ile Leu Ser
595             600                 605                 610
Leu Cys Ile Leu Val Leu Val Tyr Thr Ile Phe Gln Phe Lys Asn Lys Thr Gly
    615                 620                 625                 630
Pro Gln Pro Val Thr Tyr Tyr Lys Arg Pro Val Gln Glu Trp Val
            635                 640                 645

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<212> PRT
<213> Mouse

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Met Pro Arg Ser Arg Gly Gly Arg Ala Ala Pro Gly Gln Ala Ser Arg Trp Ser
1               5                   10                  15
Gly Trp Arg Ala Pro Gly Arg Leu Leu Pro Leu Leu Pro Ala Leu Cys Cys Leu
    20              25                  30                  35
Ala Ala Ala Ala Gly Ala Gly Lys Pro Ala Gly Ala Asp Ala Pro Phe Ala Gly
            40              45                  50
Gln Asn Trp Leu Lys Ser Tyr Gly Tyr Leu Leu Pro Tyr Glu Ser Arg Ala Ser
55              60                  65                  70
Ala Leu His Ser Gly Lys Ala Leu Gln Ser Ala Val Ser Thr Met Gln Gln Phe
        75              80                  85                  90
Tyr Gly Ile Pro Val Thr Gly Val Leu Asp Gln Thr Thr Ile Glu Trp Met Lys
            95                  100                 105
Lys Pro Arg Cys Gly Val Pro Asp His Pro His Leu Ser Arg Arg Arg Arg Asn
110             115                 120                 125
Lys Arg Tyr Ala Leu Thr Gly Gln Lys Trp Arg Gln Lys His Ile Thr Tyr Ser
            130             135                 140
Ile His Asn Tyr Thr Pro Lys Val Gly Glu Leu Asp Thr Arg Lys Ala Ile Arg
145             150                 155                 160
Gln Ala Phe Asp Val Trp Gln Lys Val Thr Pro Leu Thr Phe Glu Glu Val Pro
        165             170                 175                 180
Tyr His Glu Ile Lys Ser Asp Arg Lys Glu Ala Asp Ile Met Ile Phe Phe Ala
            185                 190                 195
Ser Gly Phe His Gly Asp Ser Ser Pro Phe Asp Gly Glu Gly Gly Phe Leu Ala
    200             205                 210                 215
His Ala Tyr Phe Pro Gly Pro Gly Ile Gly Gly Asp Thr His Phe Asp Ser Asp
            220             225                 230
Glu Pro Trp Thr Leu Gly Asn Ala Asn His Asp Gly Asn Asp Leu Phe Leu Val
235             240                 245                 250
Ala Val His Glu Leu Gly His Ala Leu Gly Leu Glu His Ser Asn Asp Pro Ser
        255             260                 265                 270
Ala Ile Met Ala Pro Phe Tyr Gln Tyr Met Glu Thr His Asn Phe Lys Leu Pro
            275                 280                 285
Gln Asp Asp Leu Gln Gly Ile Gln Lys Ile Tyr Gly Pro Pro Ala Glu Pro Leu
                        Page 33
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      290                     295                     300                     305
Glu Pro Thr Arg Pro Leu His Thr Leu Pro Val Arg Arg Ile His Ser Pro Ser
            310                     315                     320
Glu Arg Lys His Glu Arg His Pro Arg Pro Arg Pro Pro Leu Gly Asp Arg
325                 330                     335                 340
Pro Ser Thr Pro Gly Ala Lys Pro Asn Ile Cys Asp Gly Asn Phe Asn Thr Val
            345                     350                     355                 360
Ala Leu Phe Arg Gly Glu Met Phe Val Phe Lys Asp Arg Trp Phe Trp Arg Leu
                365                     370                     375
Arg Asn Asn Arg Val Gln Glu Gly Tyr Pro Met Gln Ile Glu Gln Phe Trp Lys
        380                     385                     390                     395
Gly Leu Pro Ala Arg Ile Asp Ala Ala Tyr Glu Arg Ala Asp Gly Arg Phe Val
                400                     405                     410
Phe Phe Lys Gly Asp Lys Tyr Trp Val Phe Lys Glu Val Thr Val Glu Pro Gly
415                 420                     425                     430
Tyr Pro His Ser Leu Gly Glu Leu Gly Ser Cys Leu Pro Arg Glu Gly Ile Asp
            435                     440                     445                 450
Thr Ala Leu Arg Trp Glu Pro Val Gly Lys Thr Tyr Phe Phe Lys Gly Glu Arg
                455                     460                     465
Tyr Trp Cys Tyr Ser Glu Glu Arg Arg Ala Thr Asp Pro Gly Tyr Pro Lys Pro
    470                     475                     480                     485
Ile Thr Val Trp Lys Gly Ile Pro Gln Ala Pro Gln Gly Ala Phe Ile Ser Lys
            490                     495                     500
Glu Gly Tyr Tyr Thr Tyr Phe Tyr Lys Gly Arg Asp Tyr Trp Lys Phe Asp Asn
505                 510                     515                     520
Gln Lys Leu Ser Val Glu Pro Gly Tyr Pro Arg Asn Ile Leu Arg Asp Trp Met
            525                     530                     535                 540
Gly Cys Lys Gln Lys Glu Val Glu Arg Arg Lys Glu Arg Arg Leu Pro Gln Asp
                545                     550                     555
Asp Val Asp Ile Met Val Thr Ile Asp Asp Val Pro Gly Ser Val Asn Ala Val
    560                     565                     570                     575
Ala Val Val Val Pro Cys Thr Leu Ser Leu Cys Leu Leu Val Leu Leu Tyr Thr
                580                     585                     590
Ile Phe Gln Phe Lys Asn Lys Ala Gly Pro Gln Pro Val Thr Tyr Tyr Lys Arg
595                 600                     605                     610
Pro Val Gln Glu Trp Val
        615
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